

Figs. 9, 10. *Botrychium ternatum*. 9, longitudinal; 10, transverse section.

Figs. 11, 12. Similar sections of *B. Virginianum*. *p. c.*, procambium cylinder.

Fig. 13. Transverse section of the root of *B. ternatum* just below the apical cell. The outlines of the first three segments are distinguishable.

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## Two new plants from the Cascade Mountains.

B. L. ROBINSON.

(WITH PLATE VI.)

In a small collection of phænogams from Mt. Rainier and vicinity, sent by Mr. C. V. Piper to the Gray Herbarium, two new species occur, which form the subject of the present paper. One of them is more or less closely related to *Luina hypoleuca* Benth. and *Cacaliopsis Nardosmia* Gray, and is of special interest, since it does not fall strictly within the limits of either genus as now described. Since, however, both of these genera are monotypic it seems highly injudicious to add a third genus to the group, intermediate between the two, and also of a single species. As will be seen from the description that follows, the new species resembles, on the whole, the older genus *Luina* more closely, the most important point in which it differs from it being the entire or subentire base of the anthers, in which respect it is more like *Cacaliopsis*. In its sessile entire leaves, few-flowered oblong heads with few rigid involucreal scales, it accords with *Luina*. Its inflorescence is still more racemose than in *Cacaliopsis*, and, as in that genus, the upper bracts are adnate to the pedicels; in the entire absence of pubescence from stem and leaves, in the tawny pappus, and in some characters of the corolla it differs from both. While highly probable that *Luina* should be made to include *Cacaliopsis*, this point may well be left for future discoveries to decide. The characters of the new species are as follows:

***Luina Piperi*.** (Pl. VI, figs. 1-6).—Stem simple, virgate, striate, glabrous: cauline leaves oblong-lanceolate, shortly acuminate, narrowed to sessile base, entire, in the single type specimen green and glabrous on both sides; radical leaves unknown: inflorescence racemose, one foot long; pedicels 2-6 lines long, together with the involucreal scales somewhat to-

mentose: heads 5–7-flowered, the lower scattered, cernuous, and subtended by lanceolate foliaceous bracts, the upper approximate, subspicate, erect, and with filiform bracts, which are adnate to the bases of the pedicels: involucre cylindric, of 5–7 linear or narrowly oblong, rigid, more or less carinate, acute bracts: pappus a little tawny: lobes of the corolla as long as the throat.—On Mt. Rainier, at 6,500 feet altitude; collected by C. V. Piper, August, 1888.

In *L. hypoleuca* Benth. the throat of the corolla is comparatively long and the teeth short. The proper tube is also short and manifests near the middle a peculiar change of consistence, the lower part being of firmer texture and perceptibly greater diameter than the upper. In *L. Piperi* the proper tube is long and slender, and is of like texture throughout.

The other plant to be described is a *Silene*, identical with two unnamed specimens already in the Gray Herbarium from other localities. On investigation it has been found that these plants, while agreeing closely with one another, differ in several significant particulars from any member of the genus yet described, and deserve therefore a place as a new species, the characters being as follows:

***Silene Suksdorfii.*** (Pl. VI, figs. 9–11).—A low cespitose alpine perennial: stems 2–3 inches high, usually simple, 1–3-flowered, minutely pubescent below, glandular above: cauline leaves about two pairs, 3–7 lines long, one line wide, linear, obtuse or acutish; radical leaves numerous, crowded, similar to the cauline or a little spatulate: calyx glandular-pubescent, broadly cylindric, 5 lines high by 3 lines broad, the ten nerves conspicuously anastomosing above, but unbranched below the middle of the tube: petals white, not deeply bifid, the lobes entire or minutely erose, but with no prominent lateral tooth; appendages oblong, retuse: ovary raised on a stipe, which is  $1\frac{1}{2}$  lines long.

This species most nearly resembles *S. Grayi* Watson (pl. VI, figs. 7–8) but is distinguished by its lower habit, more stipitate ovary, the shorter untoothed lobes of its petals, and the character of the calyx, since in *S. Grayi* the nerves of the calyx do not anastomose with each other, but remain quite distinct, as may be seen from fig. 7. Specimens of *S. Suksdorfii* have been sent to the Gray Herbarium from the following localities in the Cascade Mountains of Washington: Mt. Paddo (Adams), at 7,000–8,000 feet altitude, collected by W.

N. Suksdorf, Aug. 9th, 1882; Mt. Stewart, collected by T. S. Brandegee, Aug. 1883; Mt. Rainier at 8,000 feet altitude, collected by C. V. Piper, Aug. 1888.

Cambridge, Mass., Oct. 1890.

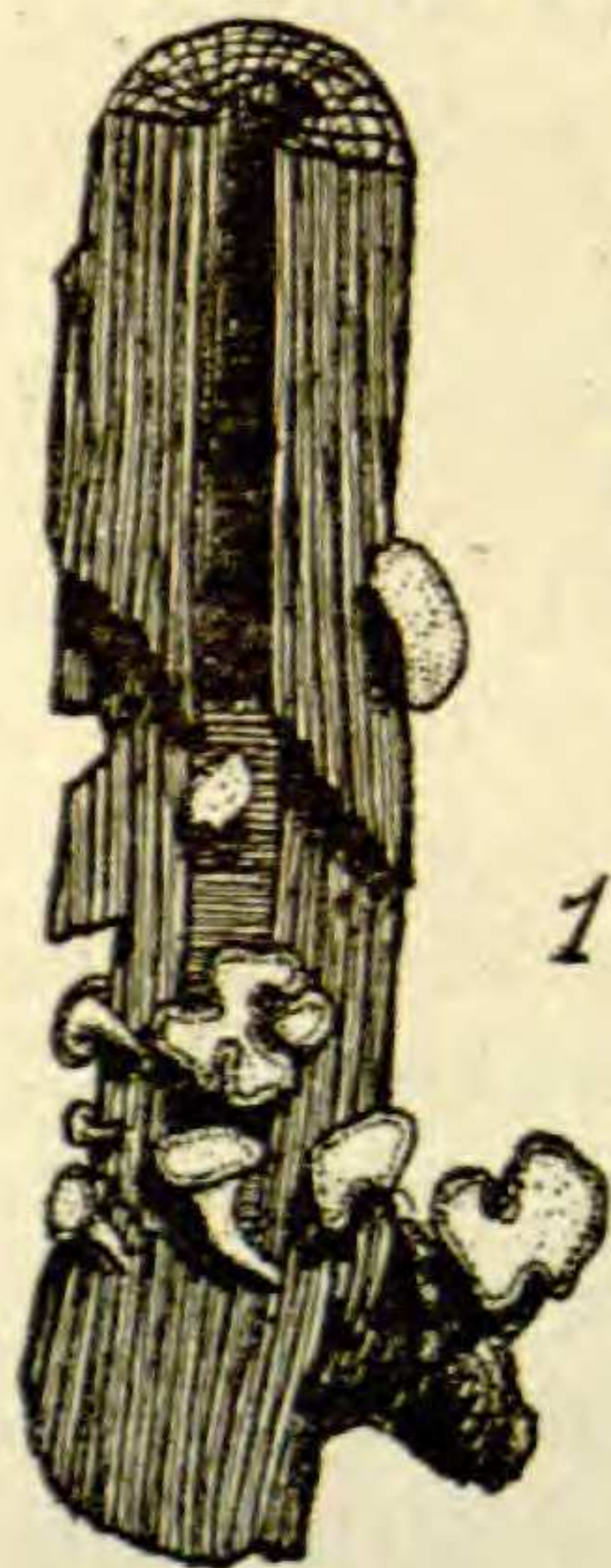
## New Species of Montana Fungi.

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(WITH PLATE VII.)

**Lentinus pholiotoides.**—Cespitose, 2 cm. high, tough and elastic. Pileus convex 1.5–2 cm. diam., appressed pilose-squamose with a few appressed wart-like scales in the disk; color at first yellowish white, becoming subferruginous. Lamellæ sinuate, attached with a decurrent tooth, hardly crowded, 2–2.5 mm. wide, margins acute, minutely fimbriate-serrulate, dull white becoming yellowish, subventricose. Stem mostly curved or crooked, tough, elastic, spongy within, minutely pubescent above, loosely floccose-squamose below, a little paler than the pileus, 2 cm. high, 3 mm. thick. Spores white, oblong, obtuse with an oblique apiculus,  $10-14 \times 5-6 \mu$ . Basidia  $35-40 \times 8-10 \mu$ , clavate-cylindrical. Has the aspect of a *Pholiota*.—On dead *Populus tremuloides*. Sand Coulee, Montana, May, 1889.

**Helotium Montaniense.**—Substipitate, pale flesh color, 1–1.5 mm. across, concave with the margin repand and lobed or undulate, rather lighter outside, glabrous and subplicate, contracted into a short stipe about 1 mm. long or nearly sessile. In shape and size about like *Mollisia cinerea* Batsch, but differing in color and in being stipi-



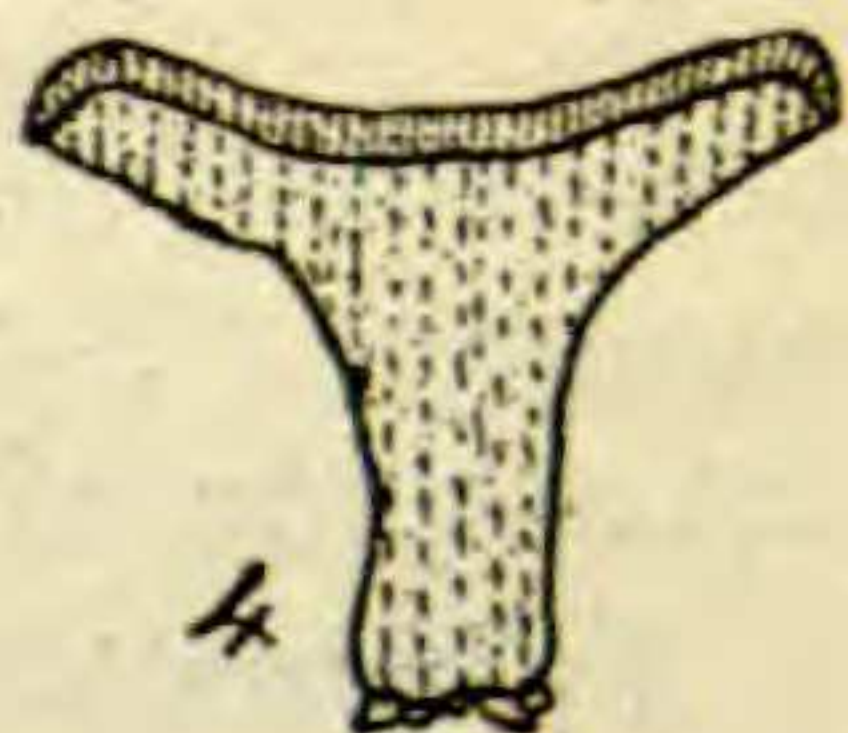
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